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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/509,308	09/27/2004	Toru Abiko	09792909-5980	5417
26263 7590 07/26/2007 SONNENSCHN NATH & ROSENTHAL LLP P.O. BOX 061080 WACKER DRIVE STATION, SEARS TOWER CHICAGO, IL 60606-1080			EXAMINER HEYI, HENOK G	
			ART UNIT 2609	PAPER NUMBER
			MAIL DATE 07/26/2007	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/509,308	ABIKO ET AL.	
	Examiner	Art Unit	
	Henok G. Heyi	2609	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 7-27-04 (Preliminary Amendment).
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-26 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7, 10-20 and 23-26 is/are rejected.
- 7) ☒ Claim(s) 8, 9, 21 and 22 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 September 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

3. **Claims 1, 3-7, 10-13, 14-20, and 23-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ito et al JP 2002-237088 (Ito hereinafter) in view of Nobuaki et al JP 2002-074747A (Nobuaki hereinafter).**

Re claims 1 and 14, Ito teaches an optical recording medium and a method of making said recording medium, wherein said recording medium comprising at least a reflective layer, a lower dielectrics layer, a recording layer, an upper dielectrics layer and a light transmissive layer that are sequentially laminated on one main surface of a substrate, wherein light having a wavelength in the range of 400 nm or more and 410 nm or less is focused with an optical system having a numeral aperture in the range of 0.84 or more and 0.86 or less followed by irradiating from a side of the light transmissive layer on the recording layer, and thereby an information signal is recorded and reproduced (a transparent substrate, successive layers of a 1st dielectric layer, a phase change recording layer, and a 2nd dielectric layer along with a metal reflective layer, para [0025]), but he is silent as to the properties of the upper and lower dielectric layers as claimed. However, Nobuaki makes it well known and obvious that the lower and upper dielectric layers in Ito would have implied and necessitated a lower dielectrics layer including a first lower dielectrics layer and a second lower dielectrics layer *that* inhibits a material *that* constitutes the first lower dielectrics layer and a material that constitutes the reflective layer from reacting; and the upper dielectrics layer includes a first upper dielectrics layer and a second upper dielectrics layer that inhibits a material that constitutes the first upper dielectrics layer and a material that constitutes the light transmissive layer from reacting as claimed (para [0028] and para [0029]).

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Re claims 3 and 16, Ito and Nobuaki in combination further teaches wherein the first lower dielectrics layer is made of a mixture of zinc sulfide and silicon oxide (Nobuaki, ZnS-SiO₂, para [0028]) and the second lower dielectrics layer is made of silicon nitride (Nobuaki, SiN, para [0025]).

Re claims 4 and 17, Ito and Nobuaki in combination further teaches wherein the first upper dielectrics layer is made of a mixture of zinc sulfide and silicon oxide (Nobuaki, ZnS-SiO₂, para [0003]) and the second upper dielectrics layer is made of silicon nitride (Nobuaki, SiN, para [0025]).

Re claims 5 and 18, Ito and Nobuaki in combination further teaches wherein the recording layer is a phase change recording layer (Nobuaki, phase change mold recording layer, para [0003]).

Re claims 6 and 19, Ito and Nobuaki in combination further teaches wherein the phase change recording layer is made of a SbTe base alloy, and the reflective layer is made of a Ag base alloy (Nobuaki, an AgInSbTe system phase change mold recording layer, para [0003] and para [0021]).

Re claims 7 and 20, Ito and Nobuaki in combination further teaches wherein the SbTe base alloy includes Ge, Sb and Te, (Nobuaki, para [0003] and para [0034]) and the Ag base alloy includes Ag, Nd and Cu (Ag, Cu, and Au, para [0029]).

Re claims 10 and 23, Ito and Nobuaki in combination (in view of Nobuaki) further teaches wherein a thickness of the reflective layer is 80 nm or more and 140 nm or less (100nm to 200nm, preferably 80nm, para [0037]); a thickness of the second lower dielectrics layer is 8 nm or more and 14 nm or less (9nm, para [0063]); a thickness of the first lower dielectrics layer is 4 nm or more and 10 nm or less (2nm to 5nm, para [0037]); a thickness of the recording layer is 8 nm or more and 16 nm or less (8nm to 30nm, para [0036]); a thickness of the first upper dielectrics layer is 4 nm or more and 12 nm or less (10nm para [0055]); and a thickness of the second upper dielectrics layer is 36 nm or more and 46 nm or less (40nm para [0076].

Re claims 11 and 24, Ito and Nobuaki in combination (referencing Ito) further teaches wherein the light transmissive layer includes a light transmissive sheet and an adhesive layer for adhering the light transmissive sheet to a substrate (a pressure sensitive adhesive sheet, para [0035]).

Re claims 12 and 25, Ito and Nobuaki in combination (referencing Ito) further teaches an optical recording medium according to claim 1, wherein the adhesive layer is made of a pressure sensitive adhesive (a pressure sensitive adhesive sheet, para [0035]).

Re claims 13 and 26, Ito and Nobuaki in combination (referencing Ito) further teaches an optical recording medium according to claim 1, wherein the adhesive layer is made of a UV-curable resin (a pressure sensitive adhesive sheet, radical ultraviolet-rays cured resin, para [0035]).

4. Claims 2, 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ito et al JP 2002-237088 (Ito hereinafter) in view of Nobuaki et al JP 2002-074747A (Nobuaki hereinafter) as applied to claims 1 and 14 above respectively, and further in view of Foote, US 6218292.

Re claims 2 and 15, Ito and Nobuaki in combination does not teach about extinction coefficient. However, Foote teaches that the optical recording medium according to claim 1, wherein extinction coefficients k of materials that constitute the upper dielectrics layer and the lower dielectrics layer satisfy relationship of $0 < k < 3$ (extinction coefficient, $K=1$, col 3 line 59-66). Therefore, Ito, Nobuaki and Foote in combination as a whole would have rendered obvious the extinction coefficient as claimed.

Allowable Subject Matter

5. Claims 8, 9, 21 and 22 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter:

The prior art of record neither anticipate nor render obvious the following limitations as claimed:

Claims 8 and 21, "wherein in the phase change recording layer, a content of Ge is 2 atomic percent or more and 8 atomic percent or less, and a ratio of Sb to Te is 3.4 times or more and 4.0 times or less, and in the reflective layer a content of Nd is 0.4 atomic percent or more and 0.7 atomic percent or less and a content of Cu is 0.6 atomic percent or more and 0.9 atomic percent or less";

Claims 9 and 22, "wherein in the phase change recording layer, a content of Ge is 2 atomic percent or more and 8 atomic percent or less, and a ratio of Sb to Te is 4.2 times or more and 4.8 times or less, and in the reflective layer a content of Nd is 0.4 atomic percent or more and 0.7 atomic percent or less and a content of Cu is 0.6 atomic percent or more and 0.9 atomic percent or less".

Examiner's Notes

The referenced citations made in the rejection(s) above are intended to exemplify areas in the prior art document(s) in which the examiner believed are the most relevant to the claimed subject matter. However, it is incumbent upon the applicant to analyze the prior art document(s) in its/their entirety since other areas of the document(s) may be relied upon at a later time to substantiate examiner's rationale of record. A prior art reference must be considered in its entirety, i.e., as a whole, including portions that would lead away from the claimed invention. W.L. Gore & associates, Inc. v. Garlock, Inc., 721 F.2d 1540, 220 USPQ 303 (Fed. Cir. 1983), cert. denied, 469 U.S. 851 (1984). However, "the prior art's mere disclosure of more than one alternative does not constitute a teaching away from any of these alternatives because such disclosure does not criticize, discredit, or otherwise discourage the solution claimed...." In re Fulton, 391 F.3d 1195, 1201, 73 USPQ2d 1141, 1146 (Fed. Cir. 2004).

Contact

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Henok G. Heyi whose telephone number is (571) 272-1816. The examiner can normally be reached on Monday to Friday 7:30 to 5:00 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vu Le can be reached on (571) 272-7332. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

HGH


VU LE
SUPERVISORY PATENT EXAMINER